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Status of the genus *Emphysomera* Schiner, 1866 (Diptera: Asilidae), with a synopsis of Afrotropical species

by

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ABSTRACT

The genus *Emphysomera* Schiner, 1866, is resurrected, with a redefinition based upon old characters and establishment of new characters. Characters for separating *Emphysomera* and *Ommatius* Wiedemann, 1821, are compared. The holotype female of *Emphysomera conopsoides* (Wiedemann, 1828) is described in detail, and four Afrotropical species of *Emphysomera* are reported. *Emphysomera spinalis* sp. n., and the males of *E. atrogaster* (Bigot, 1859), *E. auribarbis* (Wiedemann, 1828) and *E. pallidapex* (Bigot, 1891) are reported for the first time. New combinations: *Ommatius atrogaster* and *O. pallidapex* are transferred to *Emphysomera. Ommatius macquarti* Bezzi, 1908 and *O. haemorrhoidalis* Lindner, 1955 are synonyms of *O. pallidapex* Bigot, 1891. *Emphysomera hyacinthina* Bigot, 1876, is transferred to *Oligopogon* Loew, 1847; it is newly synonymised with *Oligopogon penicillatus* Loew, 1857. Illustrations of significant morphological structures, including the male terminalia, are given. A key to the Afrotropical species is presented.

INTRODUCTION

Emphysomera Schiner (1866) is a small genus of small to medium-sized, black flies from tropical regions. Because of the extreme similarity of species, broadly defined character states, and lack of in-depth studies, the genus was considered a synonym of *Ommatius* Wiedemann. Of the 13 species recognised by Hull (1962), ten were from Southeast Asia, two from Africa and one from South America. Both Hull (1962) and Oldroyd (1963) included *Emphysomera* in their keys to the asilids of the world and Africa, respectively. Unfortunately, the characters used in these keys to separate *Emphysomera* and *Ommatius* are inadequate, making generic determinations difficult.

Schiner (1866) proposed the genus *Emphysomera* (Greek, *Emphys* = inflate, *mero* = part) to include species with a strongly inflated (i.e. clavate) abdomen. He designated *Ommatius conopsoides* Wiedemann (1828) from Sumatra as the type species and subsequently transferred *O. auribarbis* Wiedemann (1828) to the genus. Later, 11 species (Hull 1962) were described or transferred to *Emphysomera.* Engel (1929) further characterised the genus by noting the head being broader than the thorax and the presence of ventral rows of 'spine-like' bristles on the swollen hind femora. However, Curran (1928) and Bromley (1936) rejected the generic concept, concluding that an inflated abdomen and/or swollen femora were insufficient grounds on which to base a genus. Though Hull (1962) recognised the genus, noting the unusual female terminalia and including illustrations of various structures, he too separated it from *Ommatius* primarily on the inflated or clavate abdomen. Martin &

Papavero (1970) correctly listed *E. pulchra* Schiner under *Ommatius*, but Papavero (1973) included *Emphysomera* as a genus in the Ommatiini. Still later, Oldroyd (1974 1980) and Daniels (1989) listed *Emphysomera* as a synonym of *Ommatius* and transferred the African and Oceanian species, respectively, to *Ommatius*.

The character states of 'an inflated or clavate abdomen, swollen hind femora with ventral rows of setigerous bristles', and 'a wide head', used to define *Emphysomera*, are found in several Ommatiine species, especially those in the genus *Ommatius*. Also, the degree of inflation of the abdomen and hind femora can vary widely between and among species, especially between males and females. Furthermore, the terms 'clavate' or 'inflated' are general terms that refer to any degree of expansion toward one end of a structure. Hence, the use of these terms is ambiguous unless they are more precisely defined. Because of the above difficulties in defining the genus, *Emphysomera* has not been fully accepted. However, our studies support recognition of *Emphysomera*, and we provide characters which better define it. This paper resurrects *Emphysomera*, redescribes and illustrates *E. conopsoides*, and provides a key to and revises the Afrotropical species.

MATERIALS AND METHODS

General methodology follows that of Scarbrough (1990 1993). Descriptive terminology follows that of McAlpine (1981). Measurements of specimens were made as follows: body length as a straight line distance between the anterior margin of the face and the apex of the terminalia; wing length as the distance from the base of the costal vein to the apex of the wing. Wings were defined as being produced or dilated when their maximum breath occurred beyond the junction of the subcostal and costal veins; wings without a dilated anterior margin, e.g. a more or less straight costal margin, have the greatest breath before this junction (Londt 1981). Measurements of head width, face width at antennae, m_1 cell widths, and hind femur width and length, were taken as the maximum widths and/or lengths. Abbreviations of all illustrated structures are given in Figures 1–6 and 11–18.

The following ratios are used in the descriptions, and are defined here for convenience of the user. Face:head width ratio (FHWR), is the ratio of the greatest width of the head (measured horizontally from outer margin of one eye to the other) to the greatest width of the face at the base of the antennae. The hind femur width:length ratio (HFWLR) is the ratio of the dorsal length of the hind femur measured from trochanter to apex to the greatest vertical width of the hind femur. Ratios are listed as ranges in the text.

Collection and locality data of all species are standardised and listed sequentially by country, numbers, sex, specific location, elevation, date, collector and museum. Curators and acronyms of museums where specimens are stored are as follows: D. Grimaldi, (AMNH) American Museum of Natural History, New York, USA; J. Chainey, (BMNH) The Natural History Museum, London, England; N. Penny and P. Arnaud, (CAS) California Academy of Sciences, San Francisco, USA; J. Cumming, (CNC) Canadian National Collections, Ottawa, Canada; H. Ziegler, (DEI) Deutsches Entomologisches Institute, Eberswalde, Germany; G. Haghebaert, (ISNB) Institut Royal des Sciences Naturelle de Belqique, Bruxelles, Belgium; P. van Helsidingen, (LNHM) The Leiden Natural History Museum, Leiden, The Netherlands; J. Londt, (NMSA) Natal Museum, Pietermaritzburg, South Africa; R. Sithole, (NMBZ) National Museum, Bulawayo, Zimbabwe; L. Tsacas, (MNHN) Musèum National D'Histoire Naturelle, Paris, France; R. Danielsson, (MZLU) Zoological Museum, Lund, Sweden; I. Lansbury, (OXUM) Hope Entomological Museum, Oxford, England; D. Azuma, (PAS) Philadelphia Academy of Science, Philadelphia, USA; H.-P. Tschorsnig, (SMNS) Staatliches Museum für Naturkunde, Stuttgart, Germany; C. Thompson, (USNM) United States National Museum of Natural History, Washington, D.C., USA; R. Contreras Lichtenberg, (WIEN) Naturhistorisches Museum, Vienna, Austria; B. Burgge, (ZMA) Zoologisch Museum, Amsterdam, The Netherlands; H. Schumann, (ZMHB) Zoologische Museum, Berlin, Germany.

TAXONOMY

Emphysomera Schiner, 1866, **stat. n.**

Type species: *Ommatius conopsoides* Wiedemann, 1828, by original designation of Schiner (1866).

Redescription of genus: Hull (1962): 436–437, text figs 304, 752, 1362, 1371.

Diagnosis: The genus *Emphysomera* is readily supported by the following combination of character states:

(1) Veins R_4 and R_5 arising well beyond base of cell m_1, resulting in a short r_4 cell (Fig. 1).

(2) Base of cell r_4 asymmetrical with veins R_4 basally arched anteriorly and R_5 basally straight. A longer r_4 cell with veins R_4 and R_5 arising at or just beyond base of m_1 is typical of species of *Ommatius*.

(3) Abdomen (Figs 2 & 35) strongly inflated apically, at least as wide as thorax; thus constriction at segment 3 in males and junction of segments 2–3 of females is one-third to one-half maximum width of segments 6–7 and 5–6, respectively. A narrow abdomen with a slight constriction or absence of a constriction, is typical of species of *Ommatius*, where segment 3 is wide (at least two-thirds as wide as segments 6–7). The degree of inflation in females of *Ommatius* is a function of the quantity of mature eggs, i.e. the greater the number of eggs, the greater the inflation. However, the inflated condition in females of *Emphysomera* is prominent and consistent, even when eggs are absent.

(4) Epandrium (Figs 12, 24, 37, 49) largely dorsal with the apex curved downward and extended to or below apex of gonocoxal process. An epandrium with the basal half dorsal and the apical half rotated laterally and parallel to the body, rarely curved behind the terminalia, is typical of species of *Ommatius*.

(5) Gonostylus wide basally, elongate, and contrastingly slender apically, apex hooked at 90° angle (Figs 15, 26, 40, 52). This unique character varies only slightly between all species studied. Though an important character for separating species, the gonostylus is highly variable between species of *Ommatius*, usually being more strongly flattened and wider in lateral view. An apical hook may or may not be present.

(6) Aedeagus with a short ejaculatory apodeme, mostly concealed within a broad barrel-like aedeagal sheath (Figs 17, 29, 42, 54). A long ejaculatory apodeme projecting well beyond a much smaller aedeagal sheath posteriorly, much longer than the sheath and the distiphallus combined, is typical of species of *Ommatius*.

(7) Female (Figs 3, 7, 19, 31) with tergite 9 usually long, produced medially and slightly above the bases of the cerci; paired cerci broadly triangular, usually closely appressed or fused together medially and basally with tergite 9. The lateral margins of cerci and tergite 9 are slightly curved downward, forming a shallow chamber below, usually concealing the apical margin of sternite 8. Tergite 9 lacks a produced apical margin, and presence of membranous lines between the cercus and tergite 9 are common to *Ommatius*.

Other characters of *Emphysomera*, although shared by some species of *Ommatius*, are also useful in characterising the genus:

(8) Wing largely or entirely covered with dense microtrichia. Dense microtrichia are usually limited to the apical third to narrow apical margins of the wing in most species of *Ommatius*.

(9) Presence of a long, thick anepimeral bristle. This bristle is subequal to but noticeably thicker than the tergosternal bristles. Four states of this character are found in *Ommatius*: (a) absence of a bristle, (b) a long, thin, hair-like seta, (c) a bristly seta, and (d) a thick bristle which is one-half to two-thirds as long as the tergosternal bristles, i. e. usually shorter than that found in *Emphysomera*. Character state 'a' is most common in American species of *Ommatius* whereas 'd' is most common in Afrotropical species.

(10) Moderately to strongly swollen femora, especially the hind femur of males with HFWLR's of 1:2.7–1:4.0. Three character states exist in species of *Ommatius*, i.e. slender hind femur HFWLR < 1:6.5, intermediate HFWLR 1:4.5–1:6.4, swollen > 1:4.4.

(11) Hind femur of males usually with incomplete row of posteroventral bristles. Thus the bristles in the middle third of the row are usually reduced in number, length and/or thickness, or are absent. An incomplete row of posteroventral bristles in which the bristles become shorter and/or thinner sequentially toward the apex of the hind femur is typical of most Afrotropical species of *Ommatius*. A complete row is usually present in American species.

(12) Presence of a strong tubercle bearing a bristle, on the apex of the hind tibia of the male. The bristle is usually shorter than adjacent bristles, thick throughout, with the apex somewhat rounded and asymmetical. This character sometimes occurs in species of *Ommatius*.

(13) Unusually long, strong gonocoxal process, with apex near or beyond apex of epandrium (Figs 11, 23, 36, 48). Gonocoxal processes are highly variable in species of *Ommatius* but are usually small and short if present.

(14) Abdominal tergites with a uniform pattern of abundant, long, bristly setae. Setation pattern of most species of *Ommatius* usually consists of significantly shorter, thinner setae.

(15) Spermathecal capsule elongate, straight, sausage-like, with parallel margins

(Figs 10, 34), or somewhat pointed with margins converging apically (Figs 6, 22, 47). The shape of the capsule is highly variable in the American species of *Ommatius,* but is usually short and greatly reduced in length whereas a long, recurved capsule with parallel or converging margins is common in Afrotropical species.

(16) Genital furca oval with thick, usually wide, lateral arms; basal third often unusually wide, membranous with a slightly thicker middle (Figs 5, 9, 21, 33, 46). The genital furca is distinctly Y-shaped in *Ommatius*, with much narrower and thinner lateral arms and base.

Remarks: Our study strongly suggests that *Emphysomera* is a valid genus and should be reinstated. Characters 1–7 are unique and are likely apomorphic for the genus. We are aware of no other ommatiine with this combination of characters. Though it is uncertain that the remaining character states identified above are phylogenetically significant at generic level, they are useful in separating the genus from *Ommatius* and favour reinstating *Emphysomera.*

All species examined by us are similar in morphology. Males can be identified to species with certainty by examination of the terminalia. Females are almost identical, and only a few characters of the abdomen and terminalia can be used to separate some species.

Emphysomera conopsoides is described in detail below. It is treated first as it is the type species of the genus. Because species are so similar morphologically, descriptions of the remaining species are based primarily upon differences between respective species and *E. conopsoides.* All characters listed for *E. conopsoides* have been examined for each species. In the following catalogue, we have examined all primary types except for *nigra*, Schiner, *peregrina* van der Wulp, and *platymelas* Walker. Original generic combinations are indicated in square parentheses after the author's citations.

Catalogue of *Emphysomera* species

aequalis Becker, 1925, 14: 79. Types, ♂ [DEI]. Type localities: Paroe, N. Paiwan District, Kankau, and Pilam (Formosa).

aliena Osten Sacken, 1882: 111. Syntypes, 2 ♂ [DEI]. Type localities: Philippines.

atrogaster Bigot, 1859: 420. [*Ommatius*]. Type ♀ [OXUM]. Type locality: Madagascar.

auribarbis Wiedemann, 1828: 423. [*Ommatius*]. Type ♀ [ZMHB]. Type locality: Sierra Leone.

biseriata Becker, 1925: 80. Syntypes, ♂ [DEI]. Type locality: Paroe, N. Paiwan District (Formosa).

conopsoides Wiedemann, 1828: 422. [*Ommatius*]. Type ♀ [ZMHB]. Type locality: Sumatra.

femorata Bigot, 1875: 245. Type ♂ [OXUM]. Type locality: Ceylon (Sri Lanka).

flavipes Macquart, 1834: 314. [*Ommatius*]. Type unknown, probably destroyed. Type locality: Senegal. (Unrecognised.)

hageni de Meijere, 1911: 315. Type ♂ [ZMA]. Type locality: Tandjong Morawa, Sedang, Sumatra.

nigra Schiner, 1868: 195. Type ♀ [location?]. Type locality: Sambelong, Nicobar Islands.

nigrifemorata Bigot, 1876: lxxxvi. Type ♂ [OXUM]. Type locality: Amoy, China.

pallidapex Bigot, 1891: 372. [*Ommatius*] Type ♀ [OXUM]. Type locality: Assini Afrique (Ghana).

*macquarti** Bezzi, 1908: 379. [*Ommatius*]. Type ♂ [ISNB]. Type locality: Belgian Congo (Zaire). **Syn. n.**

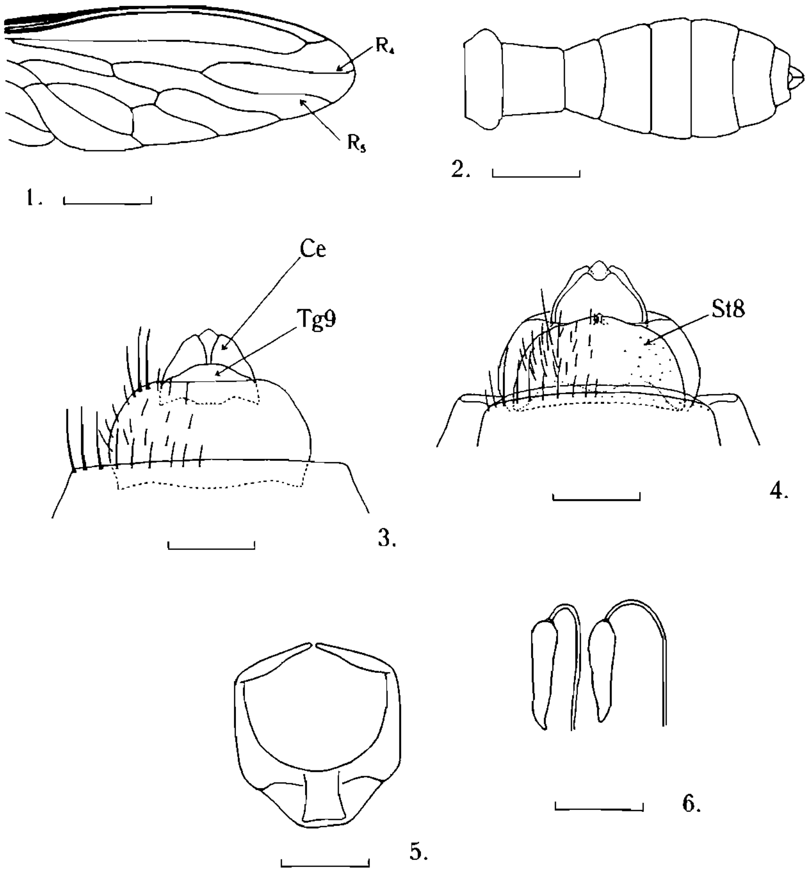
*haemorrhoidalis** Lindner, 1955: 44. [*Ommatius*] Type ♀ [SMNS]. Type locality: Tanzania. **Syn. n.**

peregrina van der Wulp, 1872: 253. Syntypes, ♂, ♀ (LNHM). Type locality: Amboina and Ternate, Moluccas.

spathulata Doleschall, 1858: 89. Types, 2 ♂, 1 ♀ . [WIEN]. Type locality: Amboina, Moluccas.

platymelas Walker, 1862: 8. Type ♀ [location?]. Type locality: Moluccas. (Synonymy established by Hull 1962: 437.)

spinalis Scarbrough & Marascia. Types, ♂, ♀ [NMSA]. Type locality: Kenya. **Sp. n.**



Figs 1–6. *Emphysomera conopsoides* (Wiedemann, 1828), female holotype. 1. Right wing. 2. Abdomen, dorsal view. 3–4. Terminalia, dorsal & ventral views. 5. furca, ventral view. 6. Spermathecal capsule. [Tg = tergite, St = sternite. Scales: Figs 1–2 = 2.0 mm, 3–4 = 0.3 mm, 5 = 0.2 mm, 6 = 0.1 mm.]

Key to Afrotropical species of *Emphysomera* Schiner

1 Epandrium with wide apex, about two-thirds as wide as base (Figs 39 & 51); female with apical corner of tergite 8 bearing 2–3 closely spaced bristly setae or bristles (Figs 31 & 44) 2

– Epandrium with narrow apex, one-half or less as wide as base (Figs 12 & 24); female with apical margin of tergite 8 bearing 2 widely spaced bristles (Figs 7, 19) 3

2 Epandrium with a small, latero-apical, digitate process (Fig. 37); aedeagal sheath dorsally as a strongly concave plate, distiphallus basally without spines (Figs 42 & 43); female with apical margin of sternite 8 truncate, spermathecal capsule tubular, apex rounded (Figs 32–34) .... **pallidapex** (Bigot)

– Epandrium without a small, latero-apical, digitate process (Fig. 49); aedeagal sheath dorsally flat, not concave, distiphallus basally with numerous spines (Figs 54 & 55); female with apical margin of sternite 8 broadly triangular, spermathecal capsule slightly tapered apically, apex slightly pointed (Figs 45–47) .... **spinalis** sp. n.

3 Gonocoxal process long, projection dorsally well beyond apex of epandrium (Fig. 11); apex of spermathecal capsule broadly rounded, apical margin of sternite 8 of female broadly triangular (Figs 7–10) .... **atrogaster** (Bigot)

– Gonocoxal process much shorter, not projecting dorsally far beyond apex of epandrium (Fig. 23); spermathecal capsule usually slightly pointed, apical margin of sternite 8 of female with 2 small rounded processes (Figs 20–22) .... **auribarbis** (Wiedemann)

Emphysomera conopsoides (Wiedemann, 1828)

Figs 1–6

Ommatius conopsoides Wiedemann, 1828: 422.
Emphysomera conopsoides: Schiner, 1866: 468.
Emphysomera conopsoides: Hull, 1962: 436. Species list.
Ommatius conopsoides: Oldroyd, 1975: 130. Catalogue.

Type material: The holotype female (ZMHB) is in excellent condition with only the flagella and styles missing. The terminalia have been removed and stored in glycerine in a microvial on the specimen pin. The specimen data are as follows: a yellow label with 'Sumatra, Daldt.' in script; a white label with '2241'; a red label with the word 'Typus'; a yellow label with the name '*conopsoides* Wied', and a white label with 'Zool. Mus. Berlin.'

Redescription, female: Dark brown to black. Length, body 11.3 mm; wing 8.7 mm. Head: Light yellowish gray tomentose with abundant, mostly yellowish vestiture. Face evenly contoured in side profile, with abundant vestiture below, shorter, slightly thinner and less abundant above; 2 vertical rows of long, thin bristles and 5–6 thicker bristles along oral margin; FHWR 1:6.8. Palpus brownish. Antenna with brown setae. Front dorsally slightly divergent; a single row of short, thin setae present laterally. Ocellar tubercle with blackish vestiture, 2 contrastingly long, bristly setae present. Occiput with 5–6 black, postocular bristles per side of head, apical third to half of 1–2 bristles proclinate.

Thorax: Largely yellowish gray tomentose with yellowish setae. Mesonotum dorsally mostly brown tomentose with a wide, median stripe and 2 long, lateral spots, tomentum otherwise brownish yellow to yellowish gray; 4–5 lateral bristles and 5 dorsocentral bristles per side posteriorly, all black. Scutellum with deep, pre-apical groove and 2 black, marginal bristles. Pleuron with long, thick, yellowish anepimeral bristle, thicker and about as long as tergosternal bristles; halter yellow. Wing: Brownish, darkest anteromedially and with abundant dense microtrichia; cell m_1 WR 1.0:2.0:1.7. Venation as in Fig. 1.

Legs: Coxae yellowish tomentose with yellow vestiture; a few bristly setae or weak bristles present apically and laterally. Femora dark brown or black; fore and mid femora with long, thin, yellow setae ventrally; mid femur with 2 black bristles anteriorly and 3 anteroventrally. Hind femur anteriorly with 1 black and 2 yellow bristles; all ventral bristles yellow with 5–6 setigerous bristles anteroventrally; posteroventral row of bristles incomplete with 2–3 contrastingly long, thick bristles on basal third plus 4 much shorter and thinner bristles on apical fourth; HFWLR 1:4.7. Tibiae yellow with narrow apices brown to reddish. Basal tarsomere of tarsi largely yellow to reddish with fore tarsus lightest, only black bristles present; basal tarsomere of fore and mid tarsi short, slightly longer than segments 2–3.

Abdomen: Constriction at junction of segments 2–3 less than one-half (= 0.45) as wide as segments 6–7; segments with abundant, somewhat long, setae; latero-apical margin of tergites 6–8 and sternites 6–7 with 2–3 closely spaced bristly setae or bristles. Apical and basal margins of tergite 9 produced medially, apical margin projecting as a short lip above the bases of cerci. Segment 8 and terminalia yellow to reddish. Sternite 8 slightly produced, rounded. Spermathecal capsule wide basally with margins converging to pointed apex. Genital furca with arms strongly angled (Fig. 5).

Male unknown.

Material examined: SUMATRA: ♀ holotype (ZMHB).

Distribution: Sumatra.

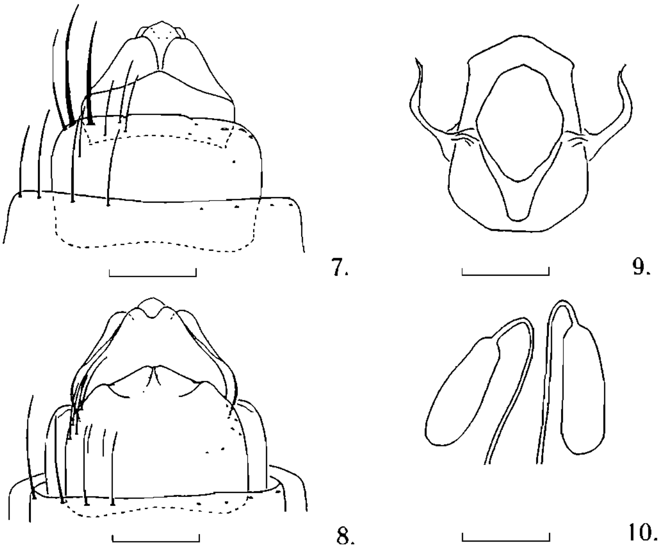
Remarks: The female of *E. conopsoides* is almost identical to females of other species in the genus, and may be identified reliably only through dissection of the terminalia and association with males. This is especially true of most females of Southeast Asian species which are virtually identical externally. It is readily distinguished from females of Afrotropical species by the shape of the base of tergite 9, sternite 8 and the spermathecal capsule.

Synopsis of Afrotropical species of *Emphysomera* Schiner

Emphysomera atrogaster (Bigot), **comb. n.**

Figs 7–18

Ommatius atrogaster Bigot, 1859: 420.
Ommatius atrogaster: Hull, 1962: 436; Oldroyd, 1980: 347.



Figs 7–10. *Emphysomera atrogaster* (Bigot, 1859), female. 7–8. Terminalia, dorsal and ventral views. 9. Genital furca, ventral view. 10. Spermathecal capsule. [Scales: Figs 7–8 = 0.3 mm, 9 = 0.2 mm, 10 = 0.1 mm.]

Type material: The holotype female (OXUM) is in excellent condition. It is labelled: '*Ommatius atrogaster* Bigot, Madagascar, type Dip:286, Hope Dept. Oxford.'

Redescription, female: As *E. conopsoides* except as follows: Length, body 9.0–12.0 mm; wing 6.5–7.9 mm; FHWR 1:6.0–1:7.0; m_1 WR 1.0:2.7:2.3–1.0:2.9:2.3; HFWLR 1:4.4–1:5.0. Head: Facial vestiture and postocular bristles entirely yellowish to largely black. Front brownish yellow tomentose with brown setae laterally. Scape ventrally with several long, pale yellow setae.

Thorax: Mesonotum dorsally without a well-defined brown tomentose stripe medially; 5 lateral and 5–7 dorsocentral bristles per side present.

Legs: Fore coxal bristles often black. Mid femur with usually black bristles, 1–2 yellow bristles sometimes present. Hind femur with 2, sometimes all, anterior bristles yellow; posteroventral row with 3 long, yellow bristles basally and 3 short, black or yellow bristles apically. Pleuron with yellow or black anepimeral bristle, 2–4 tergosternal bristles often black. Halter yellow or reddish.

Wing: Hyaline, microtrichia sparse basally.

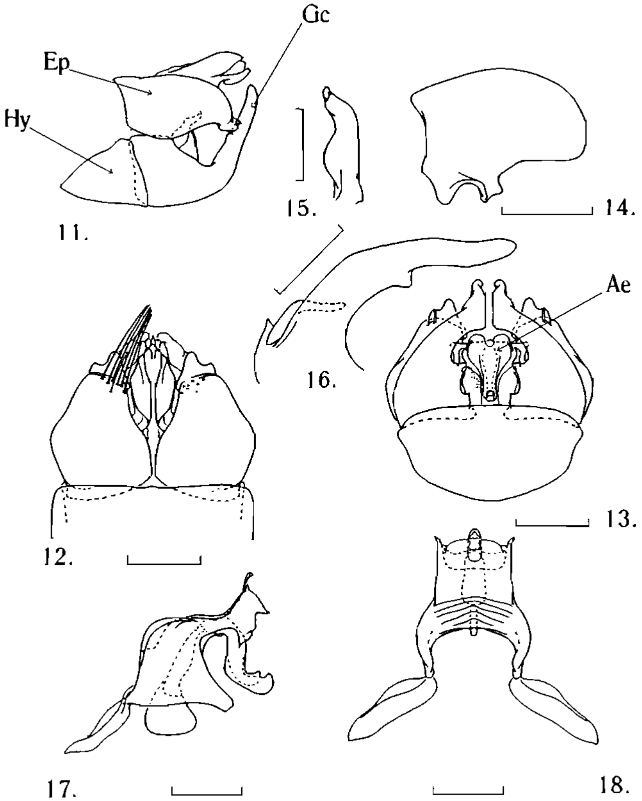
Abdomen: Black with most of segment 8 and beyond reddish. Latero-apical margin of tergites and sternites 5–7 with 3–4 long, bristly setae or bristles, with those on apical segments longest and thickest; tergite 8 with 2 widely spaced, thick, black bristles, both beyond the extreme apical corner; sternites with mostly yellow vestiture. Basal margin of sternite 8 slightly emarginate. Apical margin of sternite 8 moderately produced with a median triangular ridge between 2 shallow depressions. Spermathecal capsules slightly wider apically, apex round. Genital furca as in Fig. 9.

Male: As female except as follows. Length, body 12.0–13.5 mm; wing 9.5–8.0 mm.

Head: Face with mostly yellowish vestiture ventrally, more sparse, mostly short, black setae dorsally; 6–8 long, black bristles present; FHWR 1:5.3–1:6.4. Occiput with 6–7 black postocular bristles per side of head.

Thorax: Mesonotum with mostly black vestiture, mostly black with 4 lateral and 6 dorsocentral bristles, bristly setae laterally, posteriorly, and between rows of dorsocentral bristles. Scutellum with abundant, long, thin, whitish setae. Halter yellow.

Wing: Anteriorly with a weak dilation. Cell m_1 WR 1.0:2.1:1.7–1.0:2.1:2.0.



Figs 11–18. *Emphysomera atrogaster*, male. 11–13. Terminalia, lateral, dorsal and ventral views. 14. Epandrium, apical view. 15. Gonostylus, lateral view. 16. Right gonocoxal process. 17–18. Aedeagus, lateral and dorsal views. [Ae = aedeagus, Ce = cercus, Ep = epandrium, Gc = gonocoxite, Hy = hypandrium. Scales: Figs 11–13 = 0.4 mm, 14–15 = 0.2 mm, 16–18 = 0.3 mm.]

Legs: Fore coxa with only yellowish vestiture, 2–3 bristly setae laterally. All femora slightly to moderately swollen. Mid femur with black bristles as follows, 4 anteriorly, 4–6 anteroventrally plus 2–3 black bristly setae basally, and 1 posterodorsal pre-apical bristle. Hind femur with 4 yellow or black bristles anteriorly, 5–7 black bristles anteroventrally; posteroventral row incomplete with 3 shorter, black bristles basally and 3 weaker bristles apically; HFWLR 1:3.5–1:3.8. Tibiae slightly brownish yellow, narrow apices brown. Tarsi mostly dark brown with black bristles, basal tarsomere of fore and mid tarsi sometimes narrowly yellowish-red to brown-yellow.

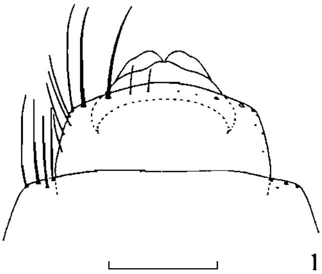
Abdomen: Strongly clavate with constriction one-third as wide as tergites 6–7, brownish tomentose with blackish setae dorsally, especially on apical 3–4 tergites, otherwise yellowish gray with pale yellowish vestiture.

Terminalia: Black. Epandrium apically half as wide as base, apex with a deep emargination. Gonostylus and aedeagus as in Figs 15–18. Gonocoxal process very slender and long, apex extending far beyond apex of epandrium.

Material examined: MADAGASCAR: ♀ holotype, *Ommatius atrogaster* Bigot, (OXUM); 1 ♂, Tananarive, 11.iii.1950 (CAS); 1 ♀, same locality, iv.1949 (CAS); 1 ♂ 3 ♀, Oriental Forest Fanovana, Dist. Fianarantosa, 1.v.1937, C. Lamberton (PAS); 1 ♂ 1 ♀, same data, 1 ♂ 2 ♀, Oriental Forest Distr., Tanovana betw Tamatave & Tananarive, 1.v.1937, C. L. Lamberton (USNM); 1 ♂ 1 ♀, 10 km north Fort Dauphin, 18.vi.1991, A. Freidberg/Fini Kaplan (NMSA); 1 ♀, Moramanga, 46 km W., 7.i.1971, H. V. Daly (BMNH); 1 ♀, Moheli, Rangani (MNHN).

Distribution: Madagascar.

Remarks: *Emphysomera atrogaster* is easily identified by the unusually long, digitate gonocoxal process of the male; and by the widely spaced bristles of tergite 8, the triangular apical margin of sternite 8 and the shape of the spermatheca in the female. The widely spaced bristles of tergite 8 are similar to those of *E. auribarbis*, and the triangular apical margin of sternite 8 is similar to that of *E. spinalis*, but *atrogaster* differs from both species in having black terminalia. *Emphysomera atrogaster* is the only Madagascan species of *Emphysomera*.



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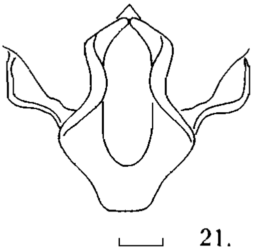

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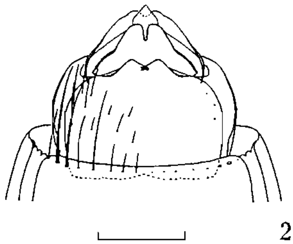

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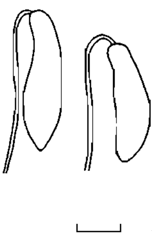


22.

Figs 19–22. *Emphysomera auribarbis* (Wiedemann, 1828), female. 19–20. Terminalia, dorsal and ventral views. 21. Genital furca, ventral view. 22. Spermathecal capsule. [Scales: Figs 19–20 = 0.3 mm, 21 = 0.3 mm, 22 = 0.1 mm.]

Emphysomera auribarbis (Wiedemann, 1828), **comb. n.**

Figs 19–30

Ommatius auribarbis Wiedemann, 1828: 423.
Emphysomera auribarbis: Hull, 1962: 436.
Ommatius auribarbis: Oldroyd, 1980: 347.

Type material: The holotype female (ZMHB) is in poor condition. The tomentum is largely obscured, somewhat greasy, and the upper right portion of the head, much of the anterior right half of the mesonotum and the upper third of the right pleuron, and most of the dorsum of the abdomen, is missing. Data includes a blue label with 'Sierra Leone' in script, two white labels with '2240' and the hand-printed name '*auribarbis*', a red label with 'Holotypus', and a yellow label with 'Zool. Mus. Berlin'.

Redescription, female: As *E. conopsoides* except as follows: Length, body 9.8–10.0 mm; wing 7.8–8.0 mm; FHWR 1:5.8–I:6.6; m_1 WR 1.0:2.1:1.9–1.0:2.9:2.3; HFWLR 1:4.5–1:4.7. Head: Grayish yellow to bright yellow; 7–8 black bristles present. Postocular bristles mostly yellow, apical two-thirds of 3 bristles strongly proclinate.

Thorax: Mesonotum with 4 lateral and 5 dorsocentral bristles; sparse brown setae present laterally and mediodorsally, with white, longer, thinner setae present posteriorly between rows of dorsocentral bristles. Pleuron with only brown tergosternal bristles.

Wing: Slightly brownish anteriorly.

Legs: Hind femur with mostly yellow bristles, 5 anteriorly and 7 anteroventrally, of these 1 always and 2 sometimes black, respectively; posteroventrally, basal 4–5 bristles quite long. All tarsi with basal tarsomere brownish yellow, apical tarsomeres dark brown.

Abdomen: Tergite 8 mostly and terminalia reddish. Latero-apical margin of tergite 8 with 2 widely spaced black bristles. Tergite 9 long, about half as long as cerci. Apical margin of sternite 8 with 2 small, rounded processes, in dry specimen these processes concealed. Spermathecal capsule slightly wider apically than basally, tapered apically with slight to moderate pointed apex. Genital furca as in Fig. 21.

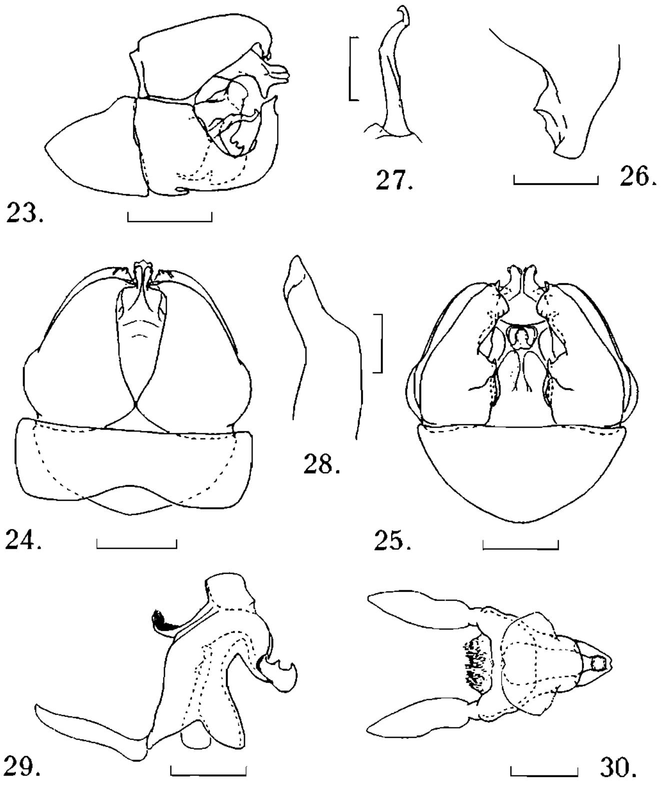
Male: As female except as follows: Length, body 10.3–14.8 mm; wing 8.1–9.4 mm. Head: Face yellowish tomentose with 5–8 black bristles and a few blackish setae dorsally; FHWR 1:6.6–1:6.8.

Thorax: Anepimeral bristle and most tergosternal bristles, black.

Wing: m_1 WR 1.0:2.3:3:1–1.0:2.3:2.3.

Legs: Mid femur with black bristles as follows, 1 pre-apical and posterodorsal, 2 anterior and 4–5 anteroventral plus 2–3 thin, setae basally; posteroventrally, a row of several long, bristly, yellow setae present. Hind femur with 5–6 anterior and 7–8 anteroventral bristles, all yellow; posteroventral row of bristles incomplete, with 4 on basal fourth and 4–5 on apical third, the latter much shorter and thinner than those basally; HFWLR 1:3.7–1:4.3.

Abdomen: Strongly clavate with constriction one-third as wide as segments 6–7; dorsally each tergite with brown tomentum, lighter on basal tergites becoming darker and more widely spread on apical segments, tergites laterally and sternites grayish to slightly brownish gray tomentose.



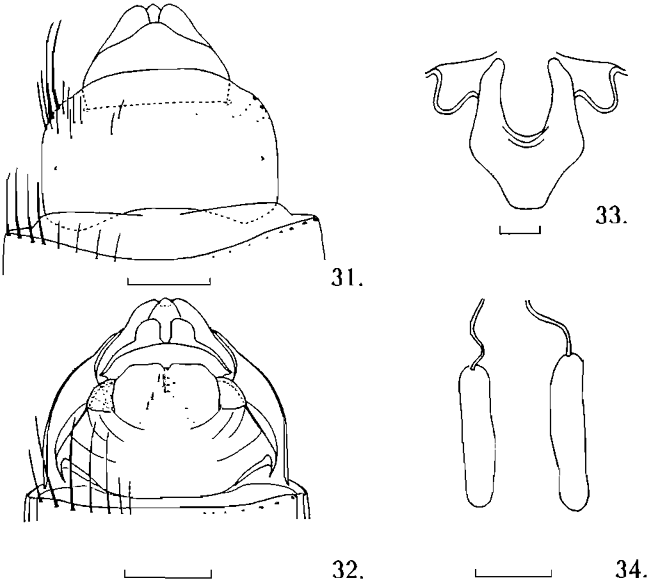
Figs 23–30. *Emphysomera auribarbis* (Wiedemann, 1828), male. 23–25. Terminalia, lateral, dorsal and ventral views. 26. Epandrium, apical view. 27. Gonostylus, lateral view. 28. Right gonocoxal process. 29–30. Aedeagus, lateral and dorsal views. [Scales: Figs 23–25 = 0.4 mm, 26–27 = 0.2 mm, 27–30 = 0.1 mm.]

Terminalia: Light to dark red. Epandrium narrow apically. Gonostylus with slight spiral or bend' apically. Aedeagus as in Figs 29–30. Gonocoxal process elongate, foot-like apically, with a heel and pointed toe.

Material examined: GUINEA: 1 ♀, Nimba, Yalanzou, 11.iv.42, M. Lamotte (MNHN). IVORY COAST: 1 ♂, Abidjan (Cocody) nr the Hotel Ivoire, 05°19'N:04°00'W, pavement vegetation, 21.iv.1989, J. G. H Londt (NMSA); 1♀, Banco Nat. Park N. Abidjan s side, edge of track in forest, 05°22'N:04°03'W, 23–27.iv.1989, J. G. H. Londt (NMSA); 3 ♂, Lauito, p 92, 22–23, 30–31.vi.70, D. Duviard (MNHN); 1 ♀, 17 km NW. Abidjan, blacklight trap, 8–9.x.1971, J. A. Gruwell (USNM). MOZAMBIQUE: 1 ♀, Env. d'Andrada, Vallee Do Revoue, xi.1905, G. Vasse (MNHN). SIERRA LEONE: ♀ holotype (ZMHB). UGANDA: 2 ♀, Entebbe, 17.viii.1911, C. C. Gowdey (BMNH); 1 ♀, Kawanda, 19.x.1958 (BMNH). ZAÏRE: 1 ♂, Likati, vi.1913, Dr. Rodhain; 1 ♀, Uele: Niangara, 13.vii.1913, Dr. Rodhain (USNM).

Distribution: Guinea, Ivory Coast, Mozambique, Sierra Leone, Uganda, Zaïre.

Remarks: Males of *Emphysomera auribarbis* are easily recognised by the combined characters of the terminalia, especially the shapes of the gonostylus, apex of the epandrium, and gonocoxal process. Females are recognised by the two, widely spaced, black bristles along the apicolateral margin of tergite 8, the shape of the spermathecal capsule, and the two, small, rounded processes along the apical margin of sternite 8. They are similar to females of *E. atrogaster*, but differ in the reddish terminalia, the shape of the apical margin of sternite 8 and a long tergite 8.



Figs 31–34. *Emphysomera pallidapex* (Bigot, 1891), female. 31–32. Terminalia, dorsal and ventral views. 33. Genital furca, ventral view. 34. Spermathecal capsule. [Scales: Figs 31–32 = 0.2 mm, 33 = 0.3 mm, 34 = 0.1 mm.]

Emphysomera pallidapex (Bigot, 1891), **comb. n.**

Figs 31–43

Ommatius pallidapex Bigot, 1891: 372; Hull, 1962: 436; Oldroyd, 1980: 348.
Ommatius macquarti Bezzi, 1908: 379; Bromley, 1942: 18; Hull, 1962: 436; Oldroyd, 1980: 347. **Syn. n.**
Ommatius haemorrhoidalis Lindner, 1955: 44; Hull, 1962: 436; Oldroyd, 1980: 347. **Syn. n.**

Type material: The female holotype of *O. pallidapex* (OXUM) is teneral, barely pigmented, the abdomen is strongly compressed (it was probably never completely inflated), and the right wing is damaged. Data includes: 'J. Bigot-type' in red ink, a blue label with 'Assini Afrique', a white label with '*Ommatius pallidapex*' in script, a white label with '*Ommatius pallidapex* J. Bigot col Bigot', a white label with 'coll. Bigot abt. 1845–93 pres. 1914 by J.T. Collins', and a white label 'Type Dip:294, *Ommatius pallidapex* Bigot, Hope Dept. Oxford'.

The male holotype of *O. macquarti* (ISNB) is in excellent condition. Data includes a white label with male symbol, a second with 'Congo, G. Hoton', a third with 'M.

Bezzi det. 1908, *Ommatius* Bezzi'; a pink label with 'Type. Cf Azzn-Soc. Ent. Belg. vol. 52 (1908) p. 379'; a folded label with '*Ommatius macquarti*, male'.

The female holotype of *O. haemorrhoidalis* (SMNS) is in excellent condition. Data includes: a blue label with 'Kware b. Mashi, 27.XII–13.I.1952, D. O. Afrika Exp.', a white label bordered in black with 'Typus Lindner 1954' in red, and a white label bordered in black with '*Ommatius haemorrhoidalis*'.

Redescription, female: As *E. conopsoides* except as follows: Length 9.7–14.0 mm, wing 9.0–11.5 mm; FHWR 1:6.0–1:6.3; m_1 WR 1.0:2.4:2.2–1.0:2.5:2.3; HFWLR 1:4.5–1:5.0. Head: Antenna with mostly brown vestiture, scape and/or pedicel ventrally with few to several pale yellowish setae.

Thorax: Mesonotum with sparse vestiture, mostly dark brown; each side of mesonotum with 5–6 lateral and 6 strong dorsocentral bristles; the latter spaced between a much shorter and weaker dorsocentral seta; numerous setae present laterally and between rows of dorsocentral bristles posteriorly. Scutellum often with a shallow or weak subapical groove, slightly brownish to yellowish tomentose basally, grayish apically; abundant thin, slightly wavy, whitish setae present. Pleuron with 1 pale yellow or black anepimeral bristle, sometimes 1–6 black tergosternal bristles present. Halter yellow to reddish.

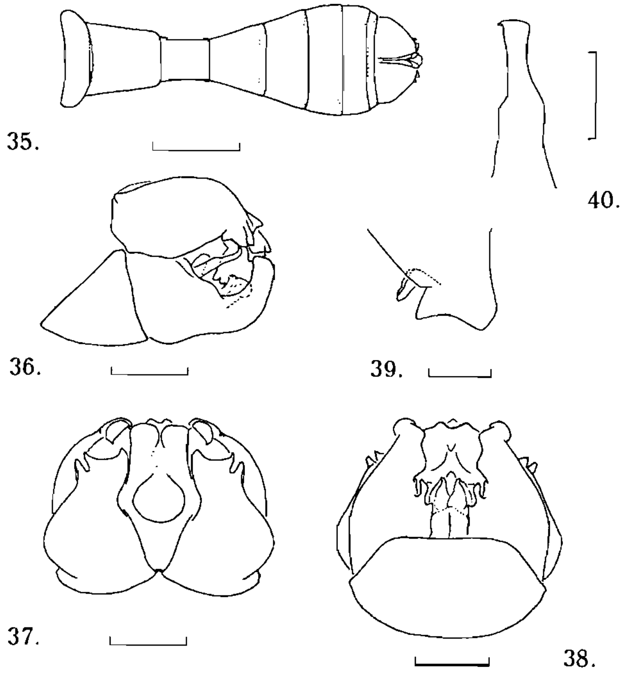
Wing: Often brownish.

Legs: Femora usually entirely dull brown to black, often with ventral half or more brown-yellow to yellow. Hind femur ventrally with all bristles whitish to yellowish, 6–7 short, thick bristles anteroventrally and 4–5 bristles posteroventrally, each about twice as long as and half as thick as anteroventral bristles; anteriorly, 2–3 whitish bristles present. Hind tibia without apical tubercle, all apical bristles thick.

Abdomen: Tergites 1–7 with large median dark brown tomentose spot and brown setae, laterally with light brownish gray tomentum; apical corners of tergites 4 laterally with 1, tergites 5–7 with 3–4, and tergite 8 with 2 black bristles. Sternites with brownish gray tomentum, vestiture sparse, pale yellowish, and sternites 5–7 apically with 2–3 bristles per side, usually thin, whitish, sometimes one or more blackish; apical fourth of tergite 8 laterally with 2–3 closely spaced, thick, black bristles, the distal bristle being thickest. Tergite 8 apically, tergite 9 and cercus usually reddish. Corners of tergite 8 with 2–3 closely spaced bristles. Tergite 9 long, broadly triangular, above cerci. Sternite 8 reddish, sometimes black, medio-apical margin truncate, narrowly divided medio-anteriorly; latero-apical corners membranous. Spermatheca sausage-like, tubular, sides parallel, sometimes middle slightly wider than ends, 5 times as long as wide, apex bluntly rounded. Genital furca as in Fig. 33.

Male: Length, 9.4–14.7 mm; wing 7.8–10.3 mm. Head: Face yellowish gray to yellow tomentose, vestiture on dorsal two-thirds of face entirely yellowish to brown; 3–12 bristles of face and vestiture of ocellar tubercle, blackish; FHWR 1:6.0–1:6.1. Front usually yellowish tomentose with single row of brown setae. Postocular bristles entirely yellow to black, usually 5–6 postocular bristles per side of head, black; 2–3 bristles strongly proclinate and long, with apices at or near ocellar tubercle posteriorly.

Thorax: Apical two-thirds of wing with dense microtrichia, sparse medially and basally.



Figs 35–40. *Emphysomera pallidapex* (Bigot, 1891), male. 35. Abdomen, dorsal view. 36–38. Terminalia, lateral, dorsal and ventral views. 39. Epandrium, apical view. 40. Left gonostylus. [Scales: Fig. 35 = 0.2 mm, Figs 36–38 = 0.4 mm, 39–40 = 0.2 mm.]

Wing: Often brownish, with anterior cells darkest and slightly corrugated; m_1 WR 1.0:2.0:1.9–1.0:2.3:2.3.

Legs: Fore coxa laterally with vertical row of 3–4 thick, whitish to slightly yellowish, bristles. Femora ventrally often with a large yellow-brown to yellow spot, to mostly yellowish. Mid femur with 1 posterodorsal, 2 anterior, and 3–4 anteroventral bristles, all usually black. Hind femur anteriorly with 2–4 black bristles, 2 of these subapically; 7–10 bristles anteroventrally with 1–7 of these black or all yellowish; basal fourth with a short row of 5–8 thick, black posteroventral bristles present; HFWLR 1:3.5–1:3.7. Tibiae largely yellow to reddish yellow, apices sometimes narrowly brown to brownish yellow with mostly or entirely black bristles; hind tibia apically with prominent, apical spur or tubercle, which bears a long, thick, black bristle. Tarsi dark with black bristles, basal tarsomere of tarsi slightly brownish yellow to reddish.

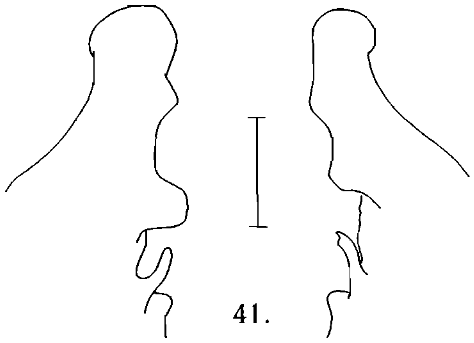
Abdomen: Constriction one-third to one-half as wide as segments 6–7; tergites dorsally usually dark brown to reddish brown with dark to reddish brown tomentum and dark vestiture. Segments 1–4 laterally grayish tomentose with pale yellow vestiture; tergites 5–8 laterally with yellowish tomentum and brownish setae; sternites with sparse yellowish to reddish tomentum and pale yellow vestiture.

Terminalia: Mostly brownish red to reddish. Cercus narrow. Epandrium with wide apex, slightly emarginate, and a short, lateral, digitate process. Gonostylus as in Fig.

27. Aedeagal sheath wide dorsally, strongly concave. Gonocoxal process subcylindrical, flat anteriorly, apex subtruncate; inner margin of basal third with 2 weak to strong tubercles.

Material examined: BOTSWANA: 1♀, Bechuanaland, Gaborone, 1915, Vict. Ellenberger (MNHN); 1♀, V.-L Kal Exp., Maun, 18.v–7.vi.30 (USNM). CHAD: 1♂ 3♀, Kalamaloue, C_4C_3, 25.ix.1973, J. Gruvel (MNHN); 3♂, Djermaia (Vieille Foute), 22.ix.1973, J. Gruvel (MNHN); 1♀, Env. Port Larug, 1970, J. Gruvel (MNHN). CONGO: 1♀, Env. de Brazzaville, 1908, E. Rouband/A. Weiss (MNHN); 1♀, same data except v.1979, J. David (MNHN); 1♀, Kintele, 30.i.1976, Onore G. Reco (MNHN); 1♀, Bassin De La Sangha, 1899, E. Regnier (MNHN). GABON: 1♀, Ogooue, Lambarene, 1913, R. Ellenberger (MNHN). GHANA: 1♂, Gold Coast, Cape Coast, Kumasi, 'Prahso', 1913, A. E. Eavens (BMNH); ♀ holotype, *Ommatius pallidapex* Bigot, Assini Afrique, J. Bigot (OXUM). IVORY COAST: 1♀, 17 km NW. Abidjan, black light trap, 8–9.x.1971, J. A. Gruwell (USNM). LIBERIA: 1♀, Moala, 31.x.1936 (USNM). SENEGAL: 1♀, Pools, 1 km N. Toupe Koute, 10 km S. Ziguinchor, 4.iii.1977, loc no 15, UTM 28PCJ600819, Febr–March 1977, Cederholm-Danielsson-Larsson-Mirestrom-Norling-Samulesson (MZLU). SIERRA LEONE: 1♀, Njala, xi.1935, E. Hargreaves (USNM). SOUTH AFRICA: 1♀, Trsvl., 5 mi W. Warmbad, 24–25 Feb. 1968, Karl V. Krombein (USNM); 1♂, Moorddrift, 3418, 1925, G. V. Dam (USNM); 1♀, Natal, Clansynd, on Wattle, 14.iv.13, C. B. Hardenberg (USNM); 1♂ 1♀, Tvl, Loskopdam Nat. Res., 24°25'S 29°20'E, 12–13.xii.1985, 10–11.xii.71, C. G. B. Moolman/L. Vam (NMSA); 1♀, Transvaal, Kruger National Park, vicinity of Skukuza, 9–12.iv.1985, J. Londt, SE2431DC, Bushveld (NMSA); 1♀, Natal, Ixopo Dist., Mackston, 30°01'S 30°18'E, Malaise trap, iv.1977, Raymond M. Miller (NMSA); 1♀, Pretoria, 2528CA, 24.xi.1978, M. Edwardes (NMSA); 1♀, Natal, Pinetown, in hedge, sunny, 1:00 PM, 3.iv.80, B. Turner (NMSA); 1♂ 1♀, Zululand, M'fongosi, W. E. Jones (BMNH). SWAZILAND: 1♂ 1♀, # 48, Mbuluzi Nature Reserve, 26°08'S:32°00'E, 25.iv.1991, J. Londt/L. Schoeman, 200 m, mixed woodland area (NMSA). TANZANIA: ♀ holotype, *Ommatius haemorrhoidalis* Lindner, Kware B. Moshi, 27.xii–13.i.1952, D. O. Afrika Exp., 'TYPUS' Lindner 1954 (SMNS). UGANDA: 1♀, Entebbe, Lakeside swamp, 16.x:1971, H. Falke (CNC). ZAÏRE: 1♂, 11.17, 15.vi.1951, Miss. H. De Saeger (BMNH); 1♀, Uele, Niangara, 13.vii.1914, Dr. Rodhain (USNM); 1♀, Rungu, 28°6'E, 03° 03'N, Rodhain (USNM); 1♀, Niangara, 28°0'E, 03°40'N (USNM); ♂ holotype, *Ommatius macquarti* Bezzi, Congo, G. Hoton (ISNB); 1♂ 1♀, Irangi, Luhoho River, 10.ix.57, E. S. Ross/R. E. Leech, 900 m (CAS); 1♀, 24 mi S. Mambasa, 1.x.57, E. S. Ross/R. E. Leech (CAS); 2♀, Boma, 13°00'E, 06°00'S, 12.vi.1915, 26.ix.1913, Lang/Chapman (USNM); 1♂ 2♀, Malela, Congo, 06°S, 12°40'E, 5–8.vii.1915, Lang/Chapman (AMNH); 1♂ 3♀, Stanleyville, Congo, 25°10'E, 00°30'N, I–II, 14–17.iv, v.1915, Lang/Chapman (AMNH). ZAMBIA: 1♀, Rhodesia Du Nord, Hunt Zambeze, Lea-hui, 1915, Vict. Ellenberger (MNHN). ZIMBABWE: 2♂, Saw Mills, 31.xii.1921 (NMBZ); 12 mls NE. Sehithwa, 16–17.iv.1972, S. African Exp. BM 1972-1, L. Ngami (BMNH). COUNTRY UNKNOWN: 2♂ 2♀, RFL, #'s 213, 313, 635, 692, 15.v-26.vi.45 (USNM); 1♂, Sese, 10.xii.46, J. B. 96GCC (BMNH).

Distribution: Botswana, Chad, Congo, Ghana, Ivory Coast, Liberia, Senegal, Sierra Leone, South Africa, Swaziland, Tanzania, Uganda, Zaïre, Zambia, Zimbabwe.



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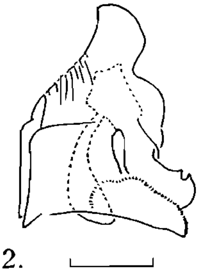

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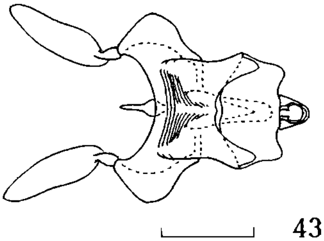


43.

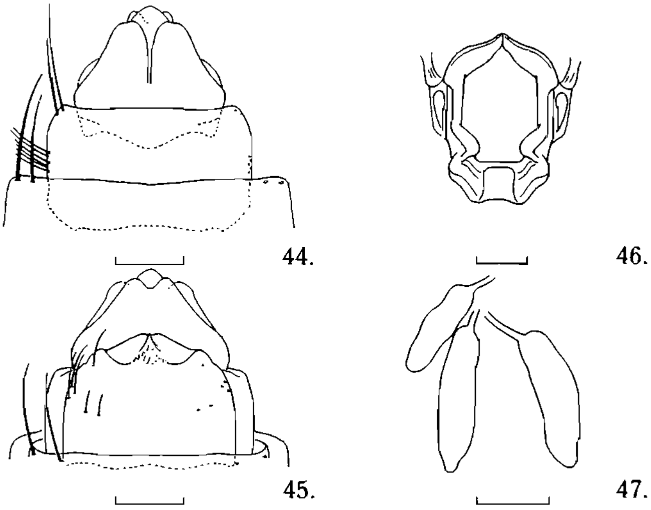
Figs 41–43. *Emphysomera pallidapex* (Bigot, 1891), male. 41. Gonocoxal process, left (South Africa) and right (Zaïre). 42–43. Aedeagus, lateral and dorsal views. [Scales: Figs 41–43 = 0.3 mm.]

Remarks: *Emphysomera pallidapex* differs from the other Afrotropical species in the character states of the male and female terminalia, particularly the subcylindrical gonocoxal process and the aedeagus of the male, and subtruncate apical margin of sternite 8 in the female. Also, the spermathecal capsule is tubular with the middle slightly wider than the apex or base.

The colour of the femora, the shape of the gonocoxal process and the number of bristles on each corner of tergite 8 in females is regionally variable. Both sexes, but particularly the female, usually have entirely blackish femora in the southern part of the species range. Elsewhere, the femora have a yellow or a yellowish tint ventrally and posteriorly, or at least a large yellowish to reddish spot in these areas. In males, the tubercles on the inner surface of the gonocoxa (Fig. 41) are much longer in South African specimens than those from other regions.

The pattern of bristles on the apical margin of tergite 8, the colour of the femora, and the shapes of sternite 8 and the spermatheca are identical for females of *O. pallidapex*, *O. haemorrhoidalis*, and *O. macquarti*, clearly suggesting that they are conspecific. Furthermore, *O. flavipes* is probably a species of *Emphysomera* (Macquart's [1834] reference to the similarity of *O. flavipes* to *O.*

conopsoides,....'Semblable a la precedente'), and is perhaps *E. pallidapex*. The type locality of *O. flavipes* is Senegal, and we have located *E. pallidapex* from that country. Unfortunately, *O. flavipes* cannot be identified since the type is probably destroyed (*pers. comm.* L. Lansbury (OXUM) & J. Londt (NMSA)).



Figs 44–47. *Emphysomera spinalis* sp. n., female. 44–45. Terminalia, dorsal and ventral views. 46. Genital furca, ventral view. 47. Spermathecal capsule. [Scales: Figs 44–45 = 0.2 mm, 46 = 0.3 mm, 47 = 0.1 mm.]

Emphysomera spinalis sp. n.

Figs 44–55

Type material: The holotype male (NMSA) is in excellent condition. Label data includes: KENYA: Nguruma, Kajiado Dist., Rift Valley, alluvial plain, 01° 50'S:36° 56'E, 700 m, I.M.Abu-Zinid. An allotype female, 4 ♂ 8 ♀ paratypes are designated with data summarised in the material examined section.

Male: As in *E. conopsoides* except as follows: Length, body 10.0–12.1 mm; wing 7.7–8.8 mm. Head: Face dull yellowish gray tomentose with 3–8 black bristles; FHWR 1:6.4–1:7.2. Front laterally with double row of brownish setae. Scape usually with few whitish or pale yellow setae. Ocellar tubercle with 2 long, yellowish or black setae. Postocular bristles yellowish, apical half of 1–2 bristles strongly proclinate.

Thorax: Largely yellowish gray to grayish tomentose. Mesonotum dorsally brown tomentose; vestiture brown to blackish with 5 lateral and 5 dorsocentral bristles; abundant brown setae laterally and between rows of dorsocentral bristles, posteriorly several long, thin, yellow setae present. Scutellum with 2 yellowish bristles; a weak, subapical groove sometimes present. Anepimeral bristle, tergosternal bristles and halter yellow.

Wing: Anteriorly not dilated, hyaline with slight yellow tint; dense microtrichia present on apical two-thirds, sparse basally. Cell m_1 WR 1.0:2.5:2.3–1.0:3.0:2.7.

Legs: Fore coxa with 5–7 yellow bristles. Fore femur basally with 3 bristly to thick ventral setae. Mid femur anteriorly with 2 and anteroventrally with 5 thick, black bristles, bristles absent on basal fourth; posteroventral setae yellow, basal 3–4 bristly. Hind femur with 4–5 anterior and 6–7 anteroventral bristles, all yellowish; basal third posteroventrally with 5–6 strong bristles, most or all black; HFWLR 1:3.8–1:3.9. Tibiae yellow with slight brown tint; hind tibia apically with a strong tubercle and bristle. Tarsi yellow or brown-yellow to brown with basal tarsomere lightest and apical tarsomere darkest; fore tarsus laterally with 2 yellowish bristles.

Abdomen: Constriction less than one-half as wide as segments 6–7; mostly black with apical 2 segments and terminalia reddish to brown-yellow or yellow. Tomentum mostly gray to yellow-gray; tergites 1–7 dorsally with brownish tomentose spots, segments 6–8 laterally light to dark reddish brown, and sternites brownish or yellowish gray. Vestiture mostly yellow, tergites 5–7 dorsally with brown setae; tergite 8 with 2–3 bristly setae, usually brown, on apicolateral margin.

Terminalia: Epandrium wide apically with strong subapical constriction; apex emarginate; apicolateral digitate process absent. Ventral lamella subapically with a short, thick ventral process. Gonostylus as in Fig. 52. Distiphallus basally with numerous spines. Gonocoxal process apically narrow, foot-like in posterior view; basal process thin, flat, leaf-like.

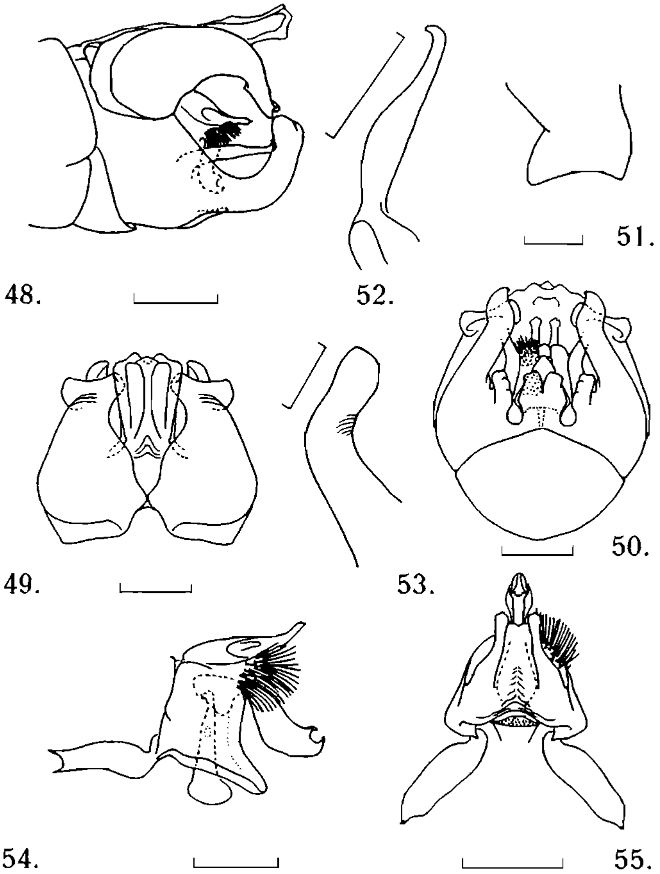
Female: As male except as follows: Length, body 9.2–11.7 mm, wing 6.6–8.9 mm; FHWR 1:6.5; HFWLR 1:4.6.

Head: Pedicel ventrally with only whitish vestiture; ocellar tubercle with black, bristly setae.

Legs: Mid femur anteroventrally with only 1 black bristle. Fore tarsus laterally with 1 yellowish bristle.

Abdomen: Segment 3 about one-half as wide as segments 6–7. Apical corners of tergites 4–8 with 2–3 moderately long, black or yellowish bristles; sternites 4–7 with long, thin, yellowish setae. Segment 8 plus cercus reddish; apical margin of tergite 8 laterally with 2–3 long, bristly setae or thin, blackish bristles. Spermathecal capsule tubular, 5 times as long as wide, apical half slightly tapered to rounded point. Genital furca as in Fig. 46.

Material examined: ♂ holotype & ♀ allotype, KENYA: Nguruma, Kajiado Dist., Rift Valley, alluvial plain, 01° 50'S:36° 56'E, 700 m, I.M.Abu-Zinid (NMSA). Paratypes: CHAD: 1 ♂, Kalamaloue, C4C3, 25.ix.1973, J. Gruvel (MNHN). MALAŴI: ♀, Dowa Dist., Dr. J. B. Davey (BMNH). MOZAMBIQUE: 1 ♂, base camp, Massangena Dist, Save River, 14.xii.1972, F. de Moor (NMBZ); 1 ♂, Beira, 2.ix.1961, G. Meinrich (CNC); 3 ♀ (1 w/o abdomen), Zambeze, Chemba, v.1928, P. Lesne (MNHN); 1 ♀, same data except I.1929 (MNHN); 1 ♀, same data except Nova Choupanga pres Chemba (MNHN); 1 ♀, Valle du Revoue, Env. D'Andrade, xi.1905, G. Vasse (MNHN). ZIMBABWE: 1 ♂, Balla-Balla, iii.1931. A. Cuthertson,



Figs 48–55. *Emphysomera spinalis* sp. n., male. 48–50. Terminalia, lateral, dorsal and ventral views. 51. Epandrium, apical view. 52. Gonostylus, lateral view. 53. Right gonocoxal process. 54–55. Aedeagus, lateral and dorsal views. [Scales: Figs 48–50 = 0.4 mm, 51–52 = 0.2 mm, 53–55 = 0.3 mm.]

(USNM); 1♀, Chipinda Pools, Tsetse Fly Ops., Lower Lundi R., 12.xi.1960, R. Goodier 1433 (BMNH).

Distribution: Chad, Kenya, Malaŵi, Mozambique, Zimbabwe.

Etymology: L. *spinalis*, meaning with spines. Refers to the presence of spines at the base of the distiphallus.

Remarks: *Emphysomera spinalis* is similar to *E. pallidapex*, but differs from it in its slightly smaller size, yellow body vestiture, and combined characters of the terminalia. The presence of long spines at the base of the distiphallus, absence of the wide, strongly concave dorsum of the aedeagal sheath, and absence of the small pre-apical digitate process of the epandrium readily characterise the male. The female also differs in the weaker bristles on the apical corners of tergite 8, the tapered apex of the spermatheca and the reduced tergite 9.

Excluded Species

Oligopogon penicillatus Loew, 1857

Oligopogon penicillatus Loew, 1857: 350. Holotype, 'Caffraria' (ZMHB).
Emphysomera hyacinthina Bigot, 1876: 86. Holotype ♂, Natal (OXUM).
Hull, 1962: 437. Species list. **Syn. n.**
Ommatius hyacinthina: Oldroyd, 1980: 347. Catalogue.

Remarks. The type of *E. hyacinthina* is easily recognised as a species of *Oligopogon* Loew by its very wide, flattened eyes, the brush-like or plumose style, the opened marginal cell, the unusually short discal cell, and the membranous metacoxal bridge. It is conspecific with the type of *O. penicillatus* Loew, a species recognised by its blackish facial vestiture and the metallic purple reflections of the abdomen. Hence, *E. hyacinthina* is excluded from *Emphysomera.*

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